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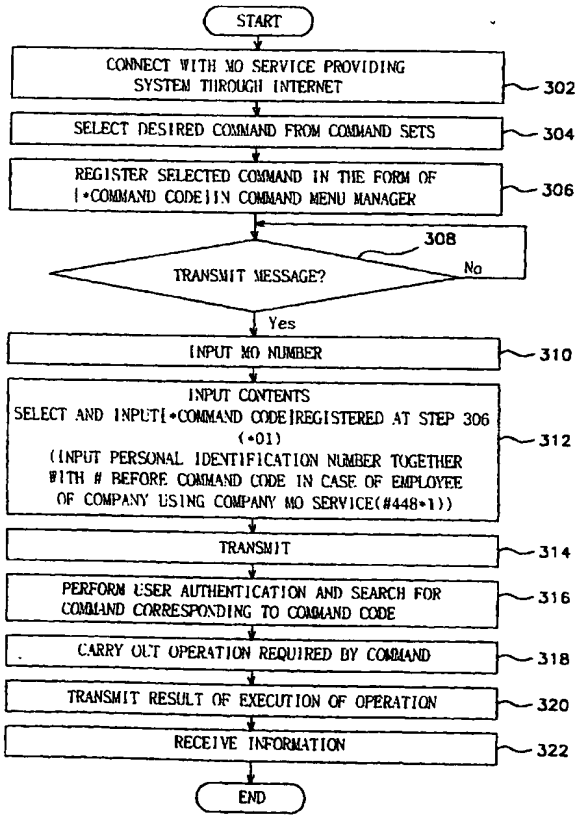
[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR PROVIDING SHORT MESSAGE SERVICES USING COMMAND CODE



(57) Abstract: A method and a system for providing a short message service using a command code are provided. The system provides a variety of information. The method is carried out in a manner where a user who wants to use information encodes various commands, registers them in advance, and when the user sends a command code through a short message, the operation corresponding to the command code is executed. The short message service method includes the following steps: providing command sets to a user connected through a wired or wireless communication network, matching a command menu selected from the command sets by the user with a command code and storing it, searching for a command corresponding to the command code when the user sends a short message(containing the command code as the contents), and performing the operation required by the command and transmitting the result. Accordingly, operations executed through a number of steps can be performed simply through the short message service using a command code.

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METHOD AND SYSTEM FOR PROVIDING SHORT MESSAGE SERVICES USING COMMAND CODE

Technical Field

The present invention relates to a short message service, and more specifically, to a method and a system for providing a short message service using command code, which transmits the contents of the short message along with the command code and provides the result of the operation with respect to the transmitted command code, and to a computer-readable recording medium that records a program for realizing the above method.

Background Art

In general, wireless internet means that the internet is accessed through a radio apparatus like a portable communication terminal to use internet services such as the web, e-mail, chatting and so on. Currently, as a standard of wireless internet access protocol, there is WAP (Wireless Application Protocol).

A general mobile communication subscriber is conventionally connected with a desired internet server using his mobile terminal through the following procedure.

A conventional wireless internet accessible mobile communication terminal has menus or reserved keys for accessing wireless internet, which are set therein. For example, a user selects the menus or presses the reserved keys to

execute a wireless internet browser, and moves a cursor from the initial menu to choose a menu, bookmark and go.

A procedure of inquiring "the stock market quotation of company A" is explained below in detail using the aforementioned internet access method.

First of all, the user selects a menu or pushes a key to access the internet through his mobile communication terminal to execute the wireless internet browser, and thereby access the wireless internet. Here, the user can input URL of a corresponding stock brokerage firm to directly go to the firm, or he can select "stock trading" from the initial menu and then choose the corresponding stock brokerage firm to go there. The user who has been connected with the stock brokerage firm should select "the stock market quotation confirmation" from various menus provided by the stock brokerage firm, including account information, stock trading, market condition, stock price and market quotation confirmation, and then input the code of the company A.

While detailed steps differ according to various mobile communication terminals, in the aforementioned conventional wireless internet access method, the user must push the keys of his terminal many times to move the cursor or select a menu until he reaches the final menu he wants. Furthermore, he must wait for a relatively long period of time until the screen corresponding to the selected menu is displayed on his terminal. This increases the charge for using the service, so the user cannot search for services that he wants with time efficiency.

Meanwhile, a digital mobile communication network has a cell structure, and provides voice communication and data communication. The data

communication may be divided into two types of wireless data communication service and short message service (referred to as "SMS" hereinafter). The SMS service that transmits and receives data using a paging channel is suitable for data communication that requires short communication time, because it has a smaller transmission data size. Accordingly, the SMS service usage is increasing with user's demands for transmission/reception of short messages and propagation of mobile communication terminals.

The SMS function receives a short message or transmits a short response message for the received message in terms of the mobile terminal. The SMS transmission/reception mode at the side of the mobile communication terminal includes a batch processing mode, which is a one-way communication, and an interactive mode, which is a two-way communication. The batch-processing mode includes a mobile terminated mode (referred to as "MT" hereinafter) and a mobile originated mode ("MO" hereinafter). Here, the MT means that the mobile terminal receives a short message transmitted from a wireless or wired terminal, and the MO service means that a mobile user (referred to as "user" hereinafter) sends a short message to a SMS service providing system.

With the MO service, in the case where the service providing system is a stock brokerage firm, for example, the user can inquire the current stock market quotation of company A through a short message, and the stock brokerage firm who received the short message from the user can search database for the current stock price of the company A to transmit it to the user through a short message.

In utilization of this MO service, however, though the user can request the information that he wants, the manager of the service providing system

should receive short messages from many users, grasp their contents individually and then search for the information corresponding to each short message to send it to the corresponding user. That is, the procedure of providing the service is complicated, and it is inefficient to provide this service to a plurality of users from the point of view of the manager of the service providing system.

In conclusion, with the above-described conventional wireless internet service or SMS service, the user must follow a complicated process, investing time and money to obtain desired information using the wireless internet. Furthermore, in case where the service providing system delivers the user-requested information to the user through the SMS service, its manager should receive a large amount of short messages and process them for each user.

Disclosure of the Invention

An objective of the present invention is to provide a method and a system for providing short message service using command codes, in which services required between an MO service provider (supplying various information) and a user who wants to use the information are registered with command codes, and when a command code is transmitted using a short message, the service corresponding to the transmitted code is provided.

Another objective of the present invention is to provide a computer-readable recording medium which stores programs for a service corresponding to a command code when the command code is transmitted using a short message (in cases where services required between an MO service provider and

a user who wants to use the information are registered with command codes).

Still another objective of the present invention is to batch-process complicated multi-stage wireless internet services within a short period of time using predetermined command codes to reduce the communication charge for using the services.

To accomplish these invention objectives, a method for providing a short message service using a command code is provided, consisting of the following steps: providing command sets to a user connected through a wireless or wired communication network; matching at least one command menu selected by the user from the command sets with a command code, and storing the command code; searching for a command corresponding to the command code when a short message including the command code is received from the user through a mobile communication terminal; and performing the operation required by the command, and transmitting the results.

To accomplish the objectives of the present invention, a computer-readable recording medium that stores programs for transmitting a short message using a command code has been developed. The program executes: a function of providing command sets to a user connected through a wireless or wired internet; a function of matching at least one command menu selected by the user from the command sets with a command code, and storing the command code; a function of searching for a command corresponding to the command code when a short message having the command code is received from the user through a mobile communication terminal; and a function of performing the operation required by the command, and transmitting the results.

To accomplish the objectives of the invention, a system for providing short message services using command codes has also been developed. Desired information is transmitted from (1) a mobile communication terminal that is connected through a wireless communication network to a wired terminal, or (2) a mobile communication terminal that is connected to a wired or wireless communication network using a short message. The system comprises: a code MO server for providing command sets to a user connected to the short message service providing system through a mobile communication terminal or a wired terminal, registering and managing a command code matched by the user with a command set, and recognizing the command code to send the results of execution of the command code to the mobile communication terminal or the wired terminal when the command code (contained in a short message) is transmitted from the mobile communication terminal through the wireless communication network; and an MO service manager to control the short message service performed between the wireless communication network and the code MO server.

Brief Description of the Drawings

Further objectives and advantages of the invention can be more comprehensively understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

FIG. 1 is an example of a communication network to which a short message service providing system, according to the present invention, is applied;

FIG. 2 illustrates the configuration of the short message service providing system shown in FIG. 1;

FIG. 3 is a flow diagram showing a method of transmitting a short message using a command code according to an embodiment of the present invention; and

FIG. 4 illustrates an example of a short message using a command code according to the present invention, which is displayed on a terminal.

Embodiments

FIG. 1 is an example of a communication network to which a short message service providing system, according to the present invention, is applied. Referring to FIG. 1, the short message service providing system of the invention includes: a mobile communication terminal 10 by which a user transmits or receives a short message through a radio communication network 20; a wired terminal 60 used when the user wants to register a command code according to the present invention through a wired communication network 50; and a short message service providing system 100 for controlling the short message service, managing command codes and processing the transmitted command codes.

The short message service providing system 100 includes: a code MO server 40 that registers and manages the command codes through the mobile communication terminal 10 or the wired terminal 60 and recognizes a command code to transmit the results of execution of the command code to the mobile terminal or the wired terminal when the command code is sent in the form of a

short message from the mobile communication terminal through the radio communication network 20; and an MO service manager 30 for controlling the short message service between the radio communication network 20 and the code MO server 40. The code MO server 40 may be a personal code MO server 401, which targets a vast majority of individuals or it may be a company code MO server 402, which is operated by one company. However, the two systems 401 and 402 have the same configuration so that the short message transmitting method using a command code according to the invention is equally applied thereto.

FIG. 2 shows the configuration of the short message service providing system shown in FIG. 1 in detail. Referring to FIG. 2, the short message service providing system 100 includes the MO service manager 30 and the code MO server 40. The MO service manager 30 has an MO number allocating part 31, which receives desired MO numbers from radio communication network proprietors to allocate them to the code MO server 40 or mobile communication terminal users.

The code MO server 401 or 402 includes: a wireless network interface 41 for communicating with the mobile communication terminal 10; a wired network interface 42 for communicating with the wired terminal 50; an information management means 44 for managing information that can be provided to users; a command set management means 45 for managing information about various commands that can be selected by the users; a command menu management means 46 for managing command codes and personal information registered by the users; and a controller 43 for controlling

information transferred between the interfaces 41 and 42, and the parts 44, 45 and 46. The personal code MO server 401 and the company code MO server 402 have the same configuration as the above-described. The user authentication procedure may differ according to whether the user who is connected to the code MO server 401 or 402 is a general personal user or an employee of a company.

The wireless network interface 41 and the wired network interface 42 provide an interface function between the terminals 10 and 60.

In the aforementioned configuration, the radio communication network 20 includes a mobile communication network capable of using cellular phones, PCS phones, and a radio paging network capable of using pagers, and TRS(Trunked Radio System). The mobile communication terminal 10 and the MO service manager 30 are connected through a general network for SMS service, so an explanation of this network is omitted.

In addition, the wired communication network 50 between the wired terminal 60 and the code MO server 401 or 402 is a general wired network such as the internet or a private line, so a detailed explanation thereof is omitted.

Since the radio communication network 20 can be constructed from a radio paging network, as described above, as well as a mobile communication network, the operator of the MO service manager 30 can receive desired MO numbers from mobile communication network proprietors or radio paging network proprietors to allocate them to the code MO servers 401 and 402, and the users.

The MO number is a number by which the code MO servers 401 and 402 can be identified. The MO number given to the personal code or company code

MO server 401, 402 is a type of telephone number by which a user is connected to the code MO server 40, especially for personal code MO server 401 using a mobile communication terminal. Furthermore, the MO number given to a user is a number (a kind of ID) allocated to the user to systematically manage the user who is connected to the code MO server 401 or 402 using his mobile communication terminal.

The MO service manager 30 manages a great number of personal code MO servers 401 and company code MO servers 402, constructing the code MO server 40 to allow the short message transmitting method using a command code according to the present invention to be performed between the code MO server 40 and the users.

The method of transmitting a short message using a command code according to the present invention through the short message service system, with the above-described configuration, is explained below in detail with reference to FIGS. 3 and 4.

FIG. 3 is a flow diagram for showing a method of transmitting a short message using a command code according to an embodiment of the present invention. FIG. 4 illustrates an example of a short message using a command code according to the present invention, which is displayed on a terminal.

To use the short message transmission service using a command code according to the present invention, a user accesses the code MO server 40 (step 302) to select a desired command from a number of command sets provided by the command set management means 45 of the code MO server 40 (step 304). Then, a request with respect to the command is matched with a specific code (a

number such as "01" or "02", for example), to be registered in the command menu management means 46 of the code MO server (step 306).

Before the registration of the command code, each code MO server 40 or each user should receive the MO number thereof, from the MO service manager 30. That is, the MO service manager 30 is given MO numbers by radio communication network proprietors, and allocates them to the code MO servers or personal users. A user can access the code MO server 40 using his MO number allocated by the code MO server as a recipient number. The code MO server 40 confirms the MO number of the user who has been connected thereto, to perform user authentication and management. Furthermore, employees of a company using the company code MO server 402 are given personal identification numbers such as member identification numbers or extension numbers.

The procedure for registering command codes using a mobile communication terminal that supports internet is explained below.

The user accesses the wireless network interface 41 of the personal code MO server 401 of the code MO server 40 through the wireless internet service of the mobile communication terminal 10, and then inputs his MO number to log in. Here, the telephone number of the mobile communication terminal 10 used by the user can be stored in the personal code MO server 401 automatically or by input of the user.

In case of a general user who wants to use the company code MO server 402, the user subscribes the company code MO server 402 and inputs his ID and password to log in. Otherwise, the user can input the telephone number of the

mobile communication terminal 10 that he will use to log in.

Furthermore, in the case of an employee of a company using the company code MO server 402, the employee can input his personal identification number such as a member identification number or an extension number along with the MO number of the company code MO server 402 to log in (step 302). Here, the company code MO server 402 will perform user authentication more easily if the employee inputs additional member identification (by pressing "#", for example) that could indicate that the identification number corresponds to an employee of the company.

When the MO number (number including a personal identification number in the case where a personal identification number exists) has been inputted as described above, controller 43 stores the inputted MO number and telephone number in temporary storage and provides various command sets managed by the command set management means 45 to the user. Accordingly, the user selects a command that he wants (step 304), and then inputs a command code (for example, number "01") with an abbreviated storage instruction button (for example, "*") (step 306).

Upon inputting the command code "01" and the abbreviated storage instruction button, controller 43 registers; the MO number stored in the temporary storage, the command selected by the user, and information about the command code in the command menu management means 46 (step 306).

Next, the procedure for registering a command code using the wired terminal 60 (PC, for example) is explained below.

The user accesses the internet using the wired terminal 60, and then

connects with the wired network interface 42 of the personal code MO server 401 and inputs his MO number to log in.

In the case of a general user who wants to use the company code MO server 402, the user subscribes the company code MO server 402 and then inputs his member ID and password to log in. Otherwise, he can input the telephone number of the mobile communication terminal 10 that he will use to log in.

Meanwhile, in the case of an employee of a company using the company code MO server 402, the employee can input his personal identification number such as a member identification number or an extension number along with the MO number of the company code MO server 402 to log in (step 302). Here, the company code MO server 402 will perform user authentication more easily if the employee inputs additional member identification (by pressing "#", for example) that could indicate that the identification number corresponds to an employee of the company.

When the MO number (number including a personal identification number in the case where a personal identification number exists) has been inputted as described above, controller 43 stores the inputted MO number and telephone number in temporary storage and provides various command sets managed by the command set management means 45 to the user. Accordingly, the user selects a command that he wants, and then chooses the command code registration procedure (step 304). At this time, controller 43 requests the user to select a number to be used as the command code. Then, the user selects a desired code (for example, "01") to complete the command code registration procedure (step 306).

A variety of command sets can be provided by the operator of each code MO server 40, which will include a short message transmission service, an e-mail service, an emergency connection network service, and an information inquiry and reporting service.

Upon completion of the command code registration procedure through the aforementioned process, controller 43 registers; the MO number stored in temporary storage, the command selected by the user, and information about the command code in the command menu management means 46 (step 306). At this time, the telephone number of the mobile communication terminal used by the user can also be stored and managed.

Through the above-described command code registration procedure (steps 302 to 306), the user can set an environment that capacitates the MO service using a simple command code on his mobile communication terminal 10. The users may then conveniently use the MO service using the previously registered command code.

Specifically, in the case where a user wants information in the form of a short message through the code MO server 40 (step 308), he selects a short message send mode through the mobile communication terminal 10 and then inputs the MO number of the code MO server 40 or the MO number allocated to him in a recipient telephone number space (step 310).

After the MO number of the code MO server 40 has been inputted, the message contents are inputted (step 312). Here, the inputted contents are not simple messages, but rather the command code (for example "01") registered in the command menu management means 46 of the code MO server 40 through

the aforementioned procedure and an abbreviated instruction button (for example, "*"). If the company code MO server 402 is used, a personal identification number such as a member identification number or an extension number allocated to the user is inputted after the identification button (for example, "#") and the abbreviated instruction button ("*") and the command code ("01") to follow the personal identification number ("#448*01", for instance).

An example of inputting the MO number (***-A-B) of the code MO server and the contents (i.e., abbreviated instruction button and command code) through the mobile communication terminal 10 is shown in FIG. 4. The MO number (***-A-B) of the code MO server may be a combination of available figures including network proprietor identification numbers (***) assigned by the radio communication network proprietors. Here, although only the command code ("01") (including a personal identification number in the case where the personal identification number exists) is inputted in the above description, other contents can be inputted following the command code.

Specifically, when the command code ("01") corresponds to the command of transmitting a short message or e-mail to a third person designated by the user, the telephone number or e-mail address of the third person can be inputted after the command code along with the identification code such as "#" or "*". Furthermore, in case where a short message is sent to many third persons, another command code ("02"), containing the telephone numbers or e-mail addresses of the multiple third persons can be inputted. That is, another constituent element that is to be executed through the command code ("01") can

be inputted following the command code ("01") according to a form that the user and the code MO server 40 have agreed upon.

The user forms a short message into which a desired command code is inputted through the aforementioned procedure (steps 308 to 312) using the mobile terminal 10 to transmit it to the code MO server 40 (step 314).

Controller 43 of the code MO server 40 performs user authentication according to the telephone number and MO number of the user based on the short message sent through the wireless network interface 41. When the user is judged to be a valid user, the controller extracts the command code included in the message contents and searches the command menu management means 46 for the telephone number, the MO number and a command corresponding to the command code (step 316). When the corresponding command has been found, the controller carries out the operation required by the command (step 318).

The above described procedure (step 316 and 318) is explained below in detail.

In the case where the user transmits the command code "01" through a short message (step 314), controller 43 searches the command menu management means 46 for command codes matched with the MO number or the telephone number used by the user to confirm if there is a command code "01" (step 316).

When there is a command code "01", the controller confirms what the command code "01" means. If the command code "01" means "stock market quotation of company A", for example, controller 43 extracts information about the "stock market quotation of company A" from the information management

means 44 (step 318). Then, controller 43 forms the extracted information into a short message and then transmits the short message using the telephone number of the mobile communication terminal 10 as a received number (step 320).

The command corresponding to the command code "01" is not limited to the information search service as described above, but it can include various commands such as a command to transmit a message to a third person, a command to send a name card and a command to transmit an e-mail.

With the stock information inquiry command as described above, the user who sent the short message can receive the message from the code MO server 40 to confirm the desired "stock market quotation of company A". In the case of other commands, a third person can receive information, short messages or e-mails, matched with the corresponding command (step 322).

Although specific embodiments including the preferred embodiment have been illustrated and described, it will be obvious to those skilled in the art that various modifications may be made without departing from the spirit and scope of the present invention, which is intended to be limited solely by the appended claims.

Industrial Applicability

According to the present invention, operations that are executed through multiple steps on the wireless internet can be performed with only a simple key operation through the short message service using a command code. Thus, the user can conveniently carry out the desired operations. Furthermore, the short

message service system can rapidly process the request from the user to improve service quality.

What Is Claimed Is:

1. A method for providing short message services using a command code, comprising the steps of:

providing command sets to a user connected through a communication network;

matching at least one command menu selected by the user from the command sets with a command code and storing the command code;

searching for a command corresponding to a command code when a short message including the command code is received from the user through a mobile communication terminal; and

performing the operation required by the command and transmitting the results.

2. The method as claimed in claim 1, wherein, when the user is an employee of a company using the company short message service, the command code includes the user's member identification number to confirm that the user is an employee of the company.

3. The method as claimed in claim 1, wherein the short message containing the command code further includes at least one of the other command codes, a telephone number and an e-mail address after the command code.

4. The method as claimed in claim 1, wherein, during the process of

performing the operation required by the command code and transmitting the results, the results are sent to the user or a third person designated by the user.

5. A computer-readable recording medium that stores programs for transmitting a short message using a command code. The program executes:

a function of providing command sets to a user connected through a wireless or wired internet;

a function of matching at least one command menu selected by the user from the command sets with a command code, and storing the command code;

a function of searching for a command corresponding to the command code when a short message having the command code is received from the user through a mobile communication terminal; and

a function of performing the operation required by the command and transmitting the results.

6. A system for providing short message services using command codes, which transmits desired information from a mobile communication terminal connected through a wireless communication network to a wired terminal or a mobile communication terminal connected to a wired or wireless communication network using a short message. The system comprises:

a code MO server for providing command sets to a user connected to the short message service providing system through a mobile communication terminal or a wired terminal, which registers and manages a command code matched by the user with a command set, and recognizes the command code to

send the results of the command code execution to the mobile communication terminal or the wired terminal when the command code(contained in a short message) is transmitted from a mobile communication terminal through a wireless communication network; and

an MO service manager for controlling the short message service performed between a wireless communication network and a code MO server.

7. The system as claimed in claim 6, wherein the code MO server comprises:

an interface for performing communication with a mobile communication terminal or a wired terminal;

an information management means for managing information provided to users who use a mobile communication terminal;

a command set management means for managing information about commands that can be selected by mobile communication terminal users;

a command menu management means for managing command codes registered by mobile communication terminal users, and information about the users, with command codes corresponding to a command set;

a controller for controlling information transferred through the wireless network interface and the wired network interface, an information management means, a command set management means and a command menu management means.

8. The system as claimed in claim 6, wherein the code MO server

includes a personal code MO server and a company code MO server.

9. The system as claimed in claim 6, wherein the MO service manager includes an MO number allocation part for receiving desired MO numbers from wireless communication network proprietors and allocating the MO numbers to the mobile communication terminal users.

FIG. 1

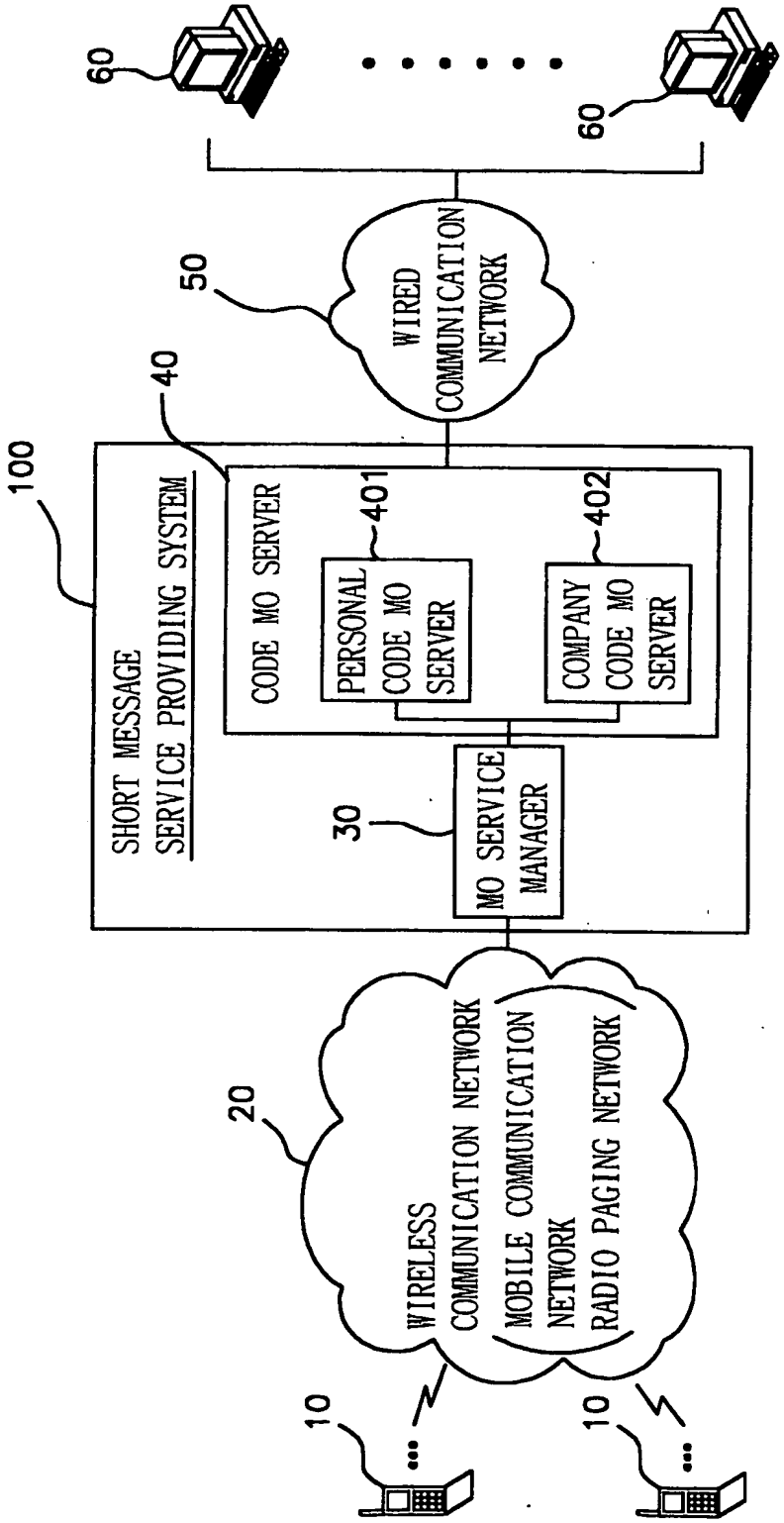

60
60
50
WIRED COMMUNICATION NETWORK
40
100
SHORT MESSAGE SERVICE PROVIDING SYSTEM
CODE MO SERVER
401
PERSONAL CODE MO SERVER
402
COMPANY CODE MO SERVER
30
MO SERVICE MANAGER
20
WIRELESS COMMUNICATION NETWORK
MOBILE COMMUNICATION NETWORK
RADIO PAGING NETWORK
10
10

FIG. 2

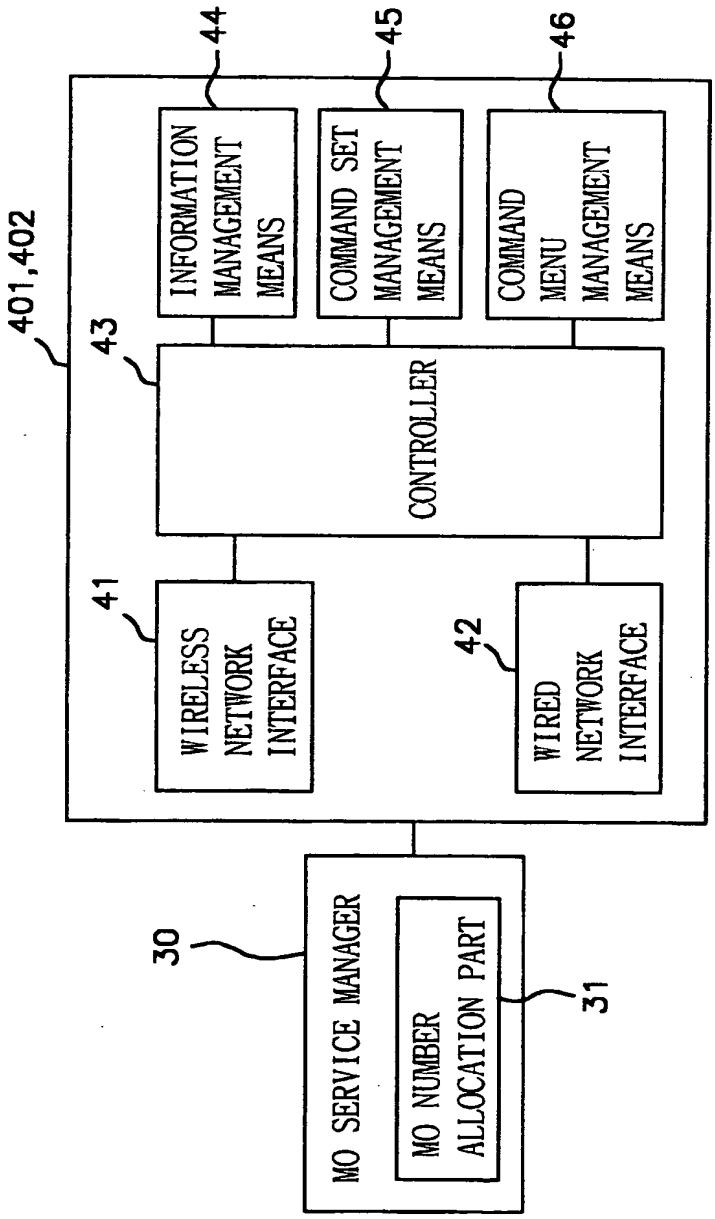


FIG. 3

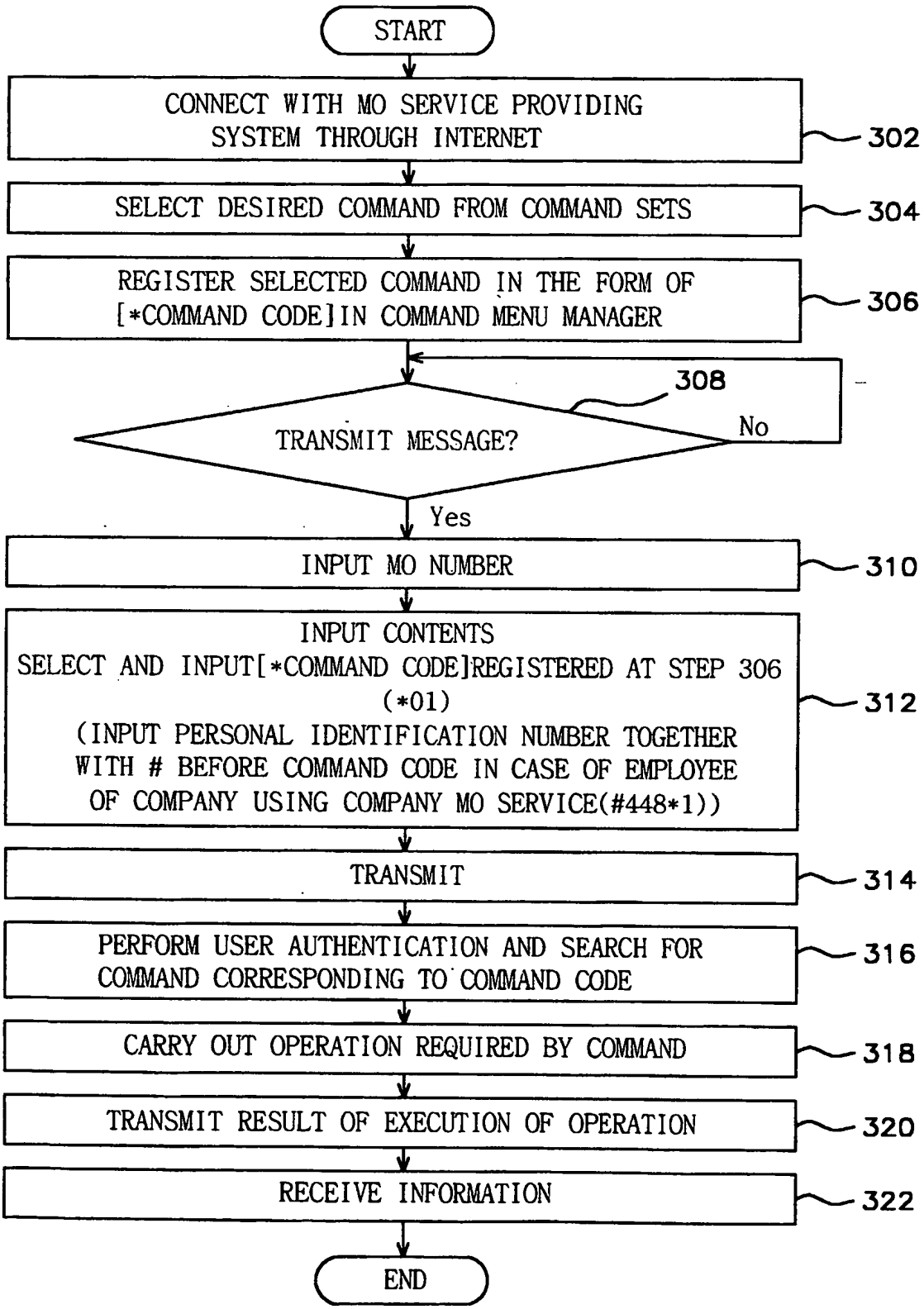
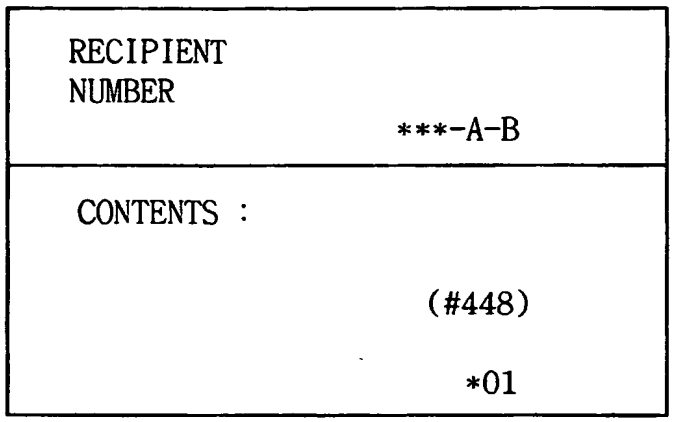

START
CONNECT WITH MO SERVICE PROVIDING SYSTEM THROUGH INTERNET
302
SELECT DESIRED COMMAND FROM COMMAND SETS
304
REGISTER SELECTED COMMAND IN THE FORM OF [*COMMAND CODE] IN COMMAND MENU MANAGER
306
308
TRANSMIT MESSAGE?
No
Yes
INPUT MO NUMBER
310
INPUT CONTENTS
SELECT AND INPUT[*COMMAND CODE]REGISTERED AT STEP 306
(*01)
(INPUT PERSONAL IDENTIFICATION NUMBER TOGETHER WITH # BEFORE COMMAND CODE IN CASE OF EMPLOYEE OF COMPANY USING COMPANY MO SERVICE(#448*1))
312
TRANSMIT
314
PERFORM USER AUTHENTICATION AND SEARCH FOR COMMAND CORRESPONDING TO COMMAND CODE
316
CARRY OUT OPERATION REQUIRED BY COMMAND
318
TRANSMIT RESULT OF EXECUTION OF OPERATION
320
RECEIVE INFORMATION
322
END

FIG. 4



INTERNATIONAL SEARCH REPORT

ıational application No.
PCT/KR01/02248

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 G06F 17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F 17/00, G06F 19/00, G06F 17/60, H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean patents and applications for inventions since 1975
Korean Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPI, PAJ, IEEE/IEE Electronic Library(Since 1988) "SMS, MO SERVICE, COMMAND"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 1999-36621 A (IBM) 25 MAY 1999 see the whole document	1-9
A	KR 2000-71277 A (PHONE.COM INC.) 25 NOV 2000 see the whole document	1-9
A	KR 2000-73705 A (S.K. TELECOM) 05 DEC 2000 see the whole document	1-9

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevence
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevence; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevence; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
03 APRIL 2002 (03.04.2002)	04 APRIL 2002 (04.04.2002)
Name and mailing address of the ISA/KR Korean Intellectual Property Office Government Complex-Daejeon, 920 Dunsan-dong, Seo-gu, Daejeon Metropolitan City 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer HEO, Young Han Telephone No. 82-42-481-5780

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